A Framework for Enabling SBA

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SBA Concepts

- Enterprise-wide **electronic interactions and information sharing** (info created once, used broadly)
- Early and continuing **collaborative exploration of the largest possible trade space** across the life cycle, including time-phased requirements and technology insertion
- Conceiving, designing, testing and managing to **optimize "system of systems" attributes**, including interoperability
- **M&S-based assessments** early in the development cycle; **alternative system designs built, tested and operated in the computer** before critical decisions are locked-in and manufacturing begins
- **Reduction of activities more cost-effectively performed in M&S**, such as drawings, mock-ups, prototypes and some aspects of live testing
- Flexible, iterative **mixing of simulations and hardware**
- **Maximum appropriate reuse of all resources** - information, software (including COTS), expertise, facilities, etc. – across phases, programs and organizations

Enablers: The Building Blocks

- **To implement these concepts requires the existence of certain enablers**
  - Anything needed to allow one or more of the concepts to be implemented

- **Making these enablers available to program managers is essential for them to establish their particular implementations cost-effectively**
- **We have begun the task of identifying the enablers**

Ten Classes of Enablers
(per DoD Acquisition Council)

- **Policy, law and organizational changes** (Concepts a c d f g)
- **Process changes** (a b c d e f g)
- **Standards for data interchange** (a b c d e g)
- **Standards for M&S software application interoperability** (b c d e g)
- **Authoritative information sources** (a b c d f g)
- **Capable, reusable models and simulations** (b c d e f g)
- **Means to manage collaboration & multi-domain optimization** (b c d)
- **Means to identify, protect & obtain reusable resources** (a b c d e f g)
- **Business case evidence** (a b c d e f g)
- **Education, motivation & evolution of work force** (a b c d e f g)

Note: Well-understood and broadly available enablers (e.g., computers, networks, communication protocols) are omitted

Enabler Class Definitions (1 of 3)

- **Policy, law and organizational changes** remove structural barriers or provide missing guidance in the areas of management responsibilities, budgeting, contractual matters and business transactions.
- **Process changes** establish or evolve processes (e.g., program planning, solicitation, systems engineering, T&E) to optimize their effectiveness
- **Standards for data interchange** specify the semantics (meaning) and syntax (structure) of exchanged information to reduce the inefficiency and confusion that can arise as information is shared across an enterprise.
- **Standards for M&S software application interoperability** define the technical architecture, including associated APIs, rules and conventions, to allow the effective, coherent exchange of information among software tools (e.g., models, simulations).

Enabler Class Definitions (2 of 3)

- **Authoritative information sources** provide an accurate, credible information base for the enterprise, to be used directly or as raw material for other tasks such as building models, simulations or scenarios.
- **Capable, reusable models and simulations** are required to address acquisition issues (e.g., performance, reliability, cost, supportability) across a system's life cycle. Persistent federations and their support tools (e.g., data collectors) are included here, as is VV&A.
- **Means to manage collaboration and multi-domain optimization** facilitate mastering the complexity inherent in extended enterprises. Includes human interaction means; workflow management methods and tools; methods and tools for deliberation among the various viewpoints and measures of merit provided and means to capture decision rationale.

Enabler Class Definitions (3 of 3)

- **Means to identify, protect and obtain reusable resources** (e.g., info, software, analyses) avoid duplicative development/procurement. Identification means include repositories, bulletin boards and help desks. Protection includes access control and encryption policies and technologies. Obtaining includes request, release and appeal mechanisms. Also includes effective incentives for resource owners to make them available for reuse.
- **Business case evidence** supports decisions regarding commitments to establish and use advanced acquisition environments. This evidence may be based on factors such as product quality/performance, risk avoidance, time to field, market share, profit, cost savings or cost-avoidance.
- **Education, motivation and evolution of work force** enablers allow the development of the required human skills and behaviors. These include educational source material, education delivery means, financial and non-financial incentives, and human resource management policies.

Gap Analysis

- Identifying the required enablers is logically followed by a gap analysis to determine if they are:
  - In hand
  - In work/emerging
  - Not yet addressed
- This gap analysis should consider all related activities that are producing enablers, across government, industry (both defense and commercial), academia, consortia, standards organizations and other nations
- This broad cross-section is represented here and points toward the benefits of a collaborative approach

Just a Sampling

- This conference is structured into ten sessions per these enabler categories
- Presentations highlight examples of in-hand and emerging enablers
- Identification of the full list of required enablers and attendant gap analysis is a work in progress
  - Stay tuned…
- We hope you will come away with a greater understanding of the challenges and some practical tools for establishing 21st century acquisition enterprises